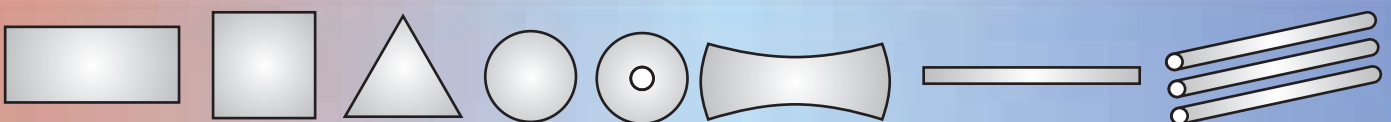


**POLYRIB**



## AN ENGINEERING THERMOPLAST

A Substitute for Steel Copper  
Metal Alloys



## INTRODUCTION

Polyrib an ultra high molecular weight polymer is an engineering plastic developed in west European Countries 3 to 4 decades ago. Most popular among mines, port, ship building, transportation of bulk materials, manufacturers of fertilizers, Chemical, Petro Chemicals, Pharmaceuticals, Textiles & Power station.

Numerous items are developed for diverse industrial application specially for Paper-Board-Pulp, Asbestos, Cement, Metal refining, coal, Chalk, we with the most modern sintered compression method process Blocks thick as well as thin, components can be fabricated as per drawing Intricate parts, assembled parts, metal insert Polyrib spares are also made. Off cut sizes are our speciality. We achieved a lot with long practical research & technical guidance of our consumers in different parts of our country.

Apart from Polyrib UHMW, we also process various other thermoplastics Polypropolene copolymer & random Copolymers, HMW-500, High density Black & Natural.

We have recently installed a imported extruder for manufacturing one meter wide 2" thick polyrib UHMW block to any length transportable. So do yourself a favour made things of your choice out of polyrib for better results.

Numerous items developed out of polyrib blocks are illustrated as under. For more information, please feel free to contact us or write us.

# POLYRIB



## DELIVERY PROGRAMME POLYRIB PRODUCTS

### Polyrib UHMW Blocks, Sheets compressed

Size : 1220mm Wide x 3990 mm Long x 10 to 200 mm Thick  
1220mm Wide x 1990 mm Long x 10 to 200 mm Thick  
660mm Wide x 2500 mm Long x 20 to 80 mm Thick  
660mm Wide x 5000 mm Long x 20 to 80 mm Thick

### Polyrib UHMW Square

Size : 15mm Sq to 150mm Square x One Meter Length Or More

Other Size Are Available On Demand

### Polyrib UHMW Rectangular

Size : 20mm to 150mm Thick x 4 ft Width  
x Desired Length

### Polyrib High Density Block HDP Black & Natural

Size : 1225 mm Wide x 3990 mm Long x 20 mm to 150 mm Thick

### Polyrib HMW 500 Sheets

Size : 1225 x 4300 mm Long x 10 to 70 mm Thick  
1200 mm Wide x 3990 mm Long x 20 to 75 mm Thick

### Polyrib UHMW Extruded Sheets

Size : 1000mm Wide x 3000 mm Long x 50 mm Thick  
length to your desired size

### PP-OG and PP-HI Compressed Sheets

Size : 1230 mm Wide x 4300 mm x 10 mm to 70 mm Thick

### Polyrib UHMW Rods Solid can machined

Size : 20 to 190 mm Dia x 300 mm Long  
40 to 190 mm Dia x 1000 mm Long or more

### Polyrib UHMW Hollow Rods can be machined

Size : 20 mm x Dia with Nominal Bore x 100 mm & 300 mm Long



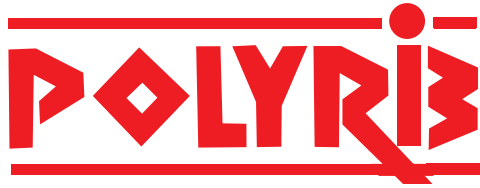
CUTTING BOARD



IMPELLER

### Prices are sent against specific enquiry

Polyrib Blocks, Sheets, Rods, Hollow Rod, Profiles are acid, alkalies, chemical resistance, suitable for food, Drinks, Alcohols, Oils, Fats, Hydrocarbons, Easily Machinable, very high impact & flexural strength, Self lubricating.



## FRICION

### ADVANTAGES OF "POLYRIB" MATERIAL

We have already mentioned in literature that loss by Sand Slurry method of Polyrib is 55 mg. as per internal Test method (24th at 1200 rpm quartz sand of particle size 0.2-0.6 mm) which clearly mentions that 'Polyrib' is better/superior in all respect to Nylon. Hence, we suggest only for achieving better results.

(For other outstanding merits of 'POLYRIB' Please refer Physical Property Chart of 'POLYRIB')

### POLYRIB ADVANTAGES OVER NYLON

	POLYRIB	NYLON
Co-efficient of friction	Low 0.09	high 0.65 or more
Density	lighter than water	Heavier than Water
Impact	Does not break	Breakable
Water absorption	NIL	Approx. 4%
Wear due to abrasion	100-70	160
Tensile Strength	Low	High



SOLID-RODS



TROLLY WHEEL



CONVEYOR WEAR STRIP

## PHYSICAL PROPERTIES

### FEATURES :

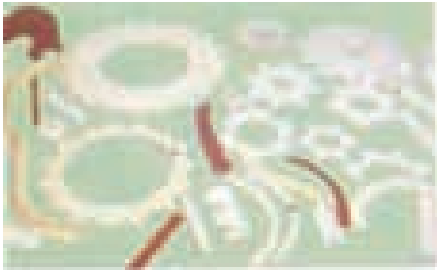
1. Density 0.94 gm/cm<sup>3</sup>
2. Very High molecular weight above 5 million
3. High Impact and flexural strength.
4. Lighter than water - unique engineering plastic.
5. Good resistance at high as well as low (-269<sup>o</sup>C) temperature.
6. Self lubricant - low coefficient of friction - excellent abrasion resistance and fine sliding properties.
7. Non-sticking to foreign material.
8. Excellent chemicals resistance to aggressive media.
9. Free from taste and odour-hyginic, approved for food contact.
10. Excellent electrical properties.
11. Easily machinable.
12. High environmental stress, cracking resistance.

### Mechanical properties measured under standard climatic conditions of 23<sup>o</sup>C and 50% RH

Property	Unit	Test Method	POLYRIB
Density (of the homogeneously pressed material)	gm/cm <sup>3</sup>	DIN 53 479	0.94
Viscosity number	ml/gm	DIN 53 728 sheet 4	2300
Intrinsic viscosity ([η]1)	ml/gm		1920
Average Molecular weight	gm/mol		4.4 x 10 <sup>6</sup>
Melt index MFI (190/21.6 <sup>3</sup> )	gm/10 min	DIN 53 735	
Yield value F (150/10)	N/mm <sup>2</sup>	DIN 53 493	0.22+0.05

### Mechanical properties, measured under standard climatic condition

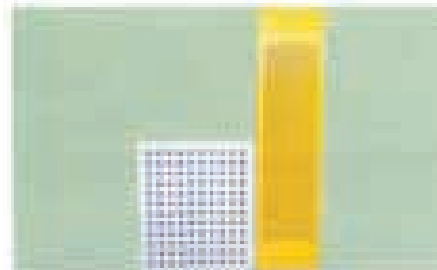
Yield stress	N/mm <sup>2</sup>	DIN 53 455 ISO 527	>=17
Elongation at yield	%	testing rate	<=20
Elongation at break4	%	50 mm/min	>50
Tensile modulus	N/mm <sup>2</sup>	DIN 53 457	720
Tensile creep modulus,		DIN 53 444	
1 hour value	N/mm <sup>2</sup>	ISO 899	460
1000 hour value	N/mm <sup>2</sup>		230
Ball indentation hardness,	N/mm <sup>2</sup>	DIN ISO 2039	
30 sec value test load 365 N		part 1	38
Shore hardness D, 3 sec value	-	DIN 53 505	63
Shore hardness D, 15 sec value	-	DIN 53 505	62
Notched impact strength	mJ/mm <sup>2</sup>	DIN 53 453	no failure
Notched impact strength (with 150 V-notch on both sides)	mJ/mm <sup>2</sup>	DIN 53 453	>=200
Wear by the sand-slurry method	-	internal test method (24 h at 1200 min <sup>-1</sup> , quartz sand of particle size 0.2-1.0 mm)	100



**BOTTLING PARTS**



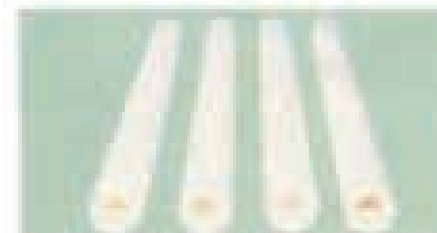
**NOZZLES**



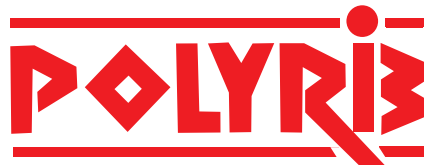
**PERFORATED PLATE**



**CONVEYOR ROLLS**



**HOLLOW BARS**



**Polyrib Resistance Chart (Chemicals)**

The following table indicates resistance to POLYRIB material against acids, alkalis and other chemicals at temperature also mentioned below under pressure. Polyrib can offer 20% more resistance in case without pressure.

Liquids	Chemical Symbol	Concentration	Temperature in ° C Polyrib
Acetic Acid	CH <sub>3</sub> COOH	97	50
Acetic Acid	CH <sub>3</sub> COOH	10	80
Alum	KAl(SO <sub>4</sub> ) <sub>2</sub> H <sub>2</sub> O	Saturated	80
Aluminum Chloride	AlCl <sub>3</sub>	Saturated	80
Ammonia	NH <sub>3</sub>	100	60
Ammonia Chloride	NH <sub>4</sub> Cl	100	80
Benzoic Acid	C <sub>6</sub> H <sub>5</sub> COOH	all%	80
Benzyle Alcohol	C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> OH	Direct	80
Boric Acid	H <sub>2</sub> BO <sub>3</sub>	Tinned	80
Calcium Chloride	CaCl <sub>2</sub>	Saturated	80
Calcium Hypochloride	CaOCl <sub>2</sub>	20	80
Chlorine (Liquid)	-	100	-
Chloride of Lime	CaCl(OCl)	-	80
Chloric Acid	HCO <sub>3</sub>	20	-
Chromic Acid	CrO <sub>3</sub>	80	50
Chromic Acid/Sulphric Acid/Water	CrO <sub>3</sub> +H <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O	50/15/35	20
Citric Acid	COOHCH <sub>2</sub> C(OH) COOHCH <sub>2</sub> COOH	10	80
Ethanol or Ethyl Alcohol	C <sub>2</sub> H <sub>5</sub> OH	96	56
Ethyl Alcohol	C <sub>2</sub> H <sub>5</sub> OH	Direct	80
Ethyl Acetate	-	Sat	80
Formic Acid	HCOOH	100	50
Formaldehyde	HCHO	40	80
Hydrochloric Acid	HCl	Concentrated	80
Hydrogen Sulphide	H <sub>2</sub> S	100	80
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	30	60
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	100	20
Nepthalene	C <sub>10</sub> H <sub>8</sub>	Saturated	-
Nitric Acid	HNO <sub>3</sub>	25	50
Oleic Acid	-	Saturated	60
Petrol	C <sub>n</sub> H <sub>2</sub> +2(n-6-10)	100	20
Phosphorpentoxyed	P <sub>2</sub> O <sub>5</sub>	100	60
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	25	80
Sodicum Carbonate	Na <sub>2</sub> CO <sub>3</sub>	Saturated	80
Sodium Chloride	NaCl	Saturated	-
Sodium Hypochlorite	NaOCl	20	80
Sodium Sulphide	Na <sub>2</sub> S	Saturated	80
Soda Lye(caustic)	NaOH	Upto 40	80
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	10	60
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	50	60
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	98	20
Toluene Toluole	C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub>	100	-
Zinc Chloride	ZnCl <sub>2</sub>	Saturated	80



**GEARS-SPROCKETS**



**PALLET BLOCK**



**SHAPES OF SHEETS/RODS**



**IMPACT ROLLER**



**PARTS - CHEMICAL INDUSTRY**



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